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मानक

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IS 8271-5-15 (1990): Quartz Crystal Units Used for Frequency Control and Selection, Part 5: Series CX for Oscillators, Section 15: Quartz Crystal Unit Type CX-15 [LITD 5: Semiconductor and Other Electronic Components and Devices]



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Bhartrhari—Nitiśatakam

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भारतीय मानक

आवृत्ति नियंत्रण और चयन में प्रयुक्त क्वार्ट्ज
क्रिस्टल इकाइयां — विशिष्ट

भाग 5 दोलकों के लिये सी एक्स श्रेणी

अनुभाग 15 क्वार्ट्ज क्रिस्टल इकाई टाईप सी एक्स-15

Indian Standard

QUARTZ CRYSTAL UNITS
USED FOR FREQUENCY CONTROL
AND SELECTION — SPECIFICATION

PART 5 SERIES CX FOR OSCILLATORS

Section 15 Quartz Crystal Unit Type CX-15

UDC 621.373.5

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BUREAU OF INDIAN STANDARDS
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Price Group 1

FOREWORD

This Indian Standard (Part 5/Sec 15) was adopted by the Bureau of Indian Standards on 17 May 1990, after the draft finalized by the Piezoelectric Devices for Frequency Control and Selection Sectional Committee had been approved by the Electronics and Telecommunication Division Council.

This standard shall be read in conjunction with IS 8271 (Part 1) : 1981 'Specification for quartz crystal units used for frequency control and selection: Part 1 General requirements and tests (*first revision*)'.

This standard is based on JSS 50910 (1971) 'Detail specification for crystal unit, quartz, styles QC 36, QC 37, QC 38, QC 39, and QC 42' issued by the Directorate of Standardization, Ministry of Defence, India. The type of quartz crystal unit covered in this standard is equivalent to style QC 38 of JSS 50910 (1971).

For the purpose of deciding whether a particular requirement of this standard is complied with, the final value, observed or calculated, expressing the result of a test or analysis, shall be rounded off in accordance with IS 2 : 1960 'Rules for rounding off numerical values (*revised*)'. The number of significant places retained in the rounded off value should be the same as that of the specified value in this standard.

Indian Standard

QUARTZ CRYSTAL UNITS USED FOR FREQUENCY CONTROL AND SELECTION — SPECIFICATION

PART 5 SERIES CX FOR OSCILLATORS

Section 15 Quartz Crystal Unit Type CX-15

1 SCOPE

1.1 This standard (Part 5/Sec 15) Specifies detail requirements for the characteristics of quartz crystal unit Type CX-15 used for frequency control and selections in oscillators.

2 REFERENCES

2.1 The following Indian Standards have been referred to in this standard:

<i>IS No.</i>	<i>Title</i>
4570 (Part 6) : 1984	Specification for crystal unit holders: Part 6 Metal, solder seal, two-pin crystal unit holder Type CX
8271 (Part 1) : 1981	Specification for quartz crystal units used for frequency control and selection: Part 1 General requirements and tests (<i>first revision</i>)

3 OUTLINE AND DIMENSIONS

3.1 Holder outline shall conform to Type CX [*see* IS 4570 (Part 6) : 1984].

4 MARKING

4.1 *See* 8 of IS 8271 (Part 1) : 1981.

5 CONSTRUCTION AND WORKMANSHIP

5.1 *See* 7 of IS 8271 (Part 1) : 1981.

6 TEST SCHEDULE AND DETAIL REQUIREMENTS

6.1 General Conditions for Test

See 9.2 of IS 8271 (Part 1) : 1981.

6.2 Test Schedule

The sequence and grouping of type, routine and acceptance tests shall be in accordance with 9.1 of IS 8271 (Part 1) : 1981.

6.3 Detail Requirements

The detail requirements applicable to this particular type of crystal unit shall be as specified in Table 1.

Table 1 Detail Requirements of Quartz Crystal Unit Type CX 15
(Clause 6.3)

Sl No.	Characteristics	Requirements
(1)	(2)	(3)
a)	Type of holder	CX (See 3)
b)	Frequency range	50 to 125 MHz
c)	Frequency tolerance:	
	Operating temperature range	± 50 ppm
d)	Load capacitance	Infinity
e)	Mode of oscillation	Fifth mechanical overtone
f)	Operating temperature range	-55°C to $+105^{\circ}\text{C}$
g)	Test set, Calibration value & rated drive level	See Table 2
h)	Capacitance shunt	7 pF, <i>Max</i>
j)	Resonance resistance:	
	i) 50 to 90 MHz	50 ohms, <i>Max</i>
	ii) 90 + to 125 MHz	60 ohms, <i>Max</i>
k)	Shock [as per 9.15 (Severity A) of IS 8271 (Part 1) : 1981]:	
	i) Frequency change permitted	± 5 ppm
	ii) Resonance resistance change permitted	± 10 percent
m)	Vibration [as per 9.16.1 (Severity A) of IS 8271 (Part 1) : 1981]:	
	i) Frequency change permitted	± 5 ppm
	ii) Resonance resistance change permitted	± 10 percent
n)	Temperature cycling:	
	i) Frequency change permitted	± 5 ppm
	ii) Resonance resistance change permitted	± 10 percent
p)	Ageing:	
	Frequency change permitted	± 5 ppm

Table 2 Test Set, Calibration Values and Rated Drive Level

[Table 1 (g)]

Frequency Range	Calibration Values		Rated Drive Level	Test Set
	Resistance	Resistor voltage		
MHz	ohms	voltage	mW	
(1)	(2)	(3)	(4)	(5)
Up to 100	60	0.35	2.0 ± 0.4 }	TS-683/TSM
Above 100	60	0.35	2.0 ± 0.4 }	AN/TSM-15

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